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TAGS: [ENRG](#) [SENV](#) [TRGY](#) [SOCI](#) [JA](#)  
SUBJECT: SOLAR POWER IN JAPAN

REF: TOKYO 1690

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11. (SBU) Summary. Solar photovoltaic (PV) power is poised to become a centerpiece of Japanese Government renewable energy initiatives aimed at cutting greenhouse gases and meeting energy needs. Increased PV use figures prominently both in the vision PM Fukuda publicly announced June 9 (ref) and in METI's "Cool Earth Innovative Technology Program." Japan's geographic situation, commercial interests, and national pride have led government and industry officials to call for renewed investment in PV power. A June 24 proposal to METI singles out solar as Japan's most promising renewable energy source and calls for new subsidies, tax incentives, and R&D investment to revitalize the domestic PV market. Germany recently overtook Japan as the country with the largest installed PV base, due in part to the end of Japanese subsidies for home installation of PV systems. Japanese firms remain among the world leaders in PV sales and technology development, but face increasing global competition. Japan's solar industry is looking to the GOJ to make long term commitments to support PV development and market penetration. End Summary.

Solar's Role in PM Fukuda's Vision

12. (SBU) Prime Minister Fukuda's vision for dealing with climate change and Japan's energy needs includes a goal to reduce domestic greenhouse gas emissions 14 percent by 2020 and 60-80 percent by 2050 (ref). To help achieve these cuts and regain world leadership in PV power, the Fukuda Vision announced June 9 spells out domestic goals for a ten-fold

increase in solar power generation by 2020 and a forty-fold increase by 2030. To reach these goals, the PM's statement calls for constructing large-scale solar power generation plants and employing solar power in 70 percent of newly built housing. However, the challenges involved in meeting these goals are extensive, according to officials at METI's Agency for Natural Resources and Energy. The high cost of PV cells and installation -- around 2.3 million yen (roughly 22,000 USD) for an average 3.5 kilowatt (kW) residential system -- discourages many homeowners, particularly since residential subsidies ended in 2005.

#### METI's Strategy

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¶3. (SBU) METI's March 2008 Cool Earth-Innovative Energy Technology Program includes "supply-side innovative photovoltaic (PV) power generation" among 21 priority technologies that are expected to deliver substantial reductions in global greenhouse gas emissions by 2050. METI estimates successful diffusion of the 21 technologies could provide 60 percent of the emissions reductions necessary to meet Japan's "Cool Earth 50" goal of halving total global greenhouse gas emissions by 2050. Seven percent would be met by supply-side PV power generation, according to METI.

¶4. (SBU) Responding to PM Fukuda's ambitious goal for increased residential PV use, an advisory group to METI Minister Amari made "urgent recommendations" on June 24 to increase renewable energy's share of overall energy supply from 5.9 percent in 2005, to 8.2 percent in 2020, and then up to 11.1 percent in 2030. The proposal calls for the realization of a "solar power society" with PV power providing most of the targeted increase in renewable energy.

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Commenting on the proposal, METI officials said Japan already exploits most of its best wind, biomass, waste, and hydroelectric power resources, while its PV potential has barely been tapped. The proposal calls for halving the price of current PV systems in 3-5 years through subsidies and tax incentives to households and businesses, including PV cells in new home design, and promoting large-scale PV plants among electric utilities.

#### Subsidies, Then...

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¶5. (SBU) The GOJ began a solar power subsidy program to local governments and private businesses in 1992, followed by a "roof top" subsidy scheme for homeowners in 1994. The residential subsidies initially ranged from 33 to 50 percent of total purchase and installation costs, but were gradually reduced to less than four percent (on average about 70,000 yen for a 2,000,000 yen system that generates 3.5kW). The program ended in 2005 under the assumption that the market was "mature enough," according to a METI representative. The subsidies were a good selling point for installation companies, but ultimately did not make PV cheap enough to sustain the market, according to METI officials. METI officials state Germany's program of feed-in tariffs enabled that country to surpass Japan as the country with the most installed PV capacity, a position Japan had held from 1997 to 2005. (Note: METI documents show the U.S. ranks third. End note.) Eighty percent of Japan's installed PV capacity is in home systems. However PV power accounted for less than 0.25 percent of Japan's total electricity output in 2005, according to METI sources. Although production costs have declined somewhat, PV power generation costs remain around 46 yen per kWh in Japan, several times that of conventional and other renewable power sources. METI expects advances in technology and manufacturing volume to drive down the cost to 7 yen per kWh by 2030.

#### ...And in the Future?

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¶6. (SBU) METI officials acknowledge the GOJ is considering various types of support for PV power for FY2009. However,

GOJ officials appear to lean toward subsidies over other types of support for priority clean energy technologies. (Note: The GOJ is also considering subsidy schemes for residential fuel cells and plug-in hybrid vehicles, according to METI officials. End Note). METI officials said Germany's feed-in tariff model would not be appropriate for Japan, as German electricity costs are nearly 30 percent higher than Japan's. According to a Ministry of Environment (MOE) official, many Diet members in the Environmental Committee argue for resuming subsidies.

17. (SBU) Since residential system subsidies ended in 2005, government support has focused on R&D investment projects, mainly through METI's New Energy and Industrial Technology Development Organization (NEDO). Subsidies worth 33-50 percent of installation costs have also been provided to local and prefectural governments to support PV systems on commercial and public property. Electric utilities are also eyeing PV projects. Under the Renewable Portfolio Standard (RPS), they need to obtain at least 0.5 percent of their supply from renewable sources, excluding large hydropower. This quota is set to double to one percent by 2010 and double again to two percent by 2014, according to METI officials.

#### Industry's Perspective

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18. (SBU) Speaking to Embassy officers at a gathering of the Japan Photovoltaic Energy Association (JPEA), industry officials said Japan is now at a crossroads on its solar policy. As domestic demand for PV waned, exports, primarily to Europe, have come to total 70 percent of Japan's total PV production, according to industry reps. They see expanded GOJ assistance as critical, not only for PV R&D, but also for expanding the market. Industry officials said it is unclear whether a new subsidy regime will resemble the earlier "roof top" program or a Germany-style feed-in tariff scheme. However, an official at PV cell maker Kyocera noted feed-in tariffs may not be best suited to Japan. JPEA reps stressed residential PV power is still the most promising application for PV in Japan, adding they would wait and see how the large-scale Sharp-KEPCO project in Osaka unfolds. In separate meetings, Sharp officials lamented that Germany-based Q-Cells AG recently overtook the company to become the world's largest PV producer. Sharp and Kansai Electric Power Company (KEPCO) recently announced plans to spend five billion yen to build Japan's largest solar power generating plant in Osaka Prefecture beginning in 2009. Counting on long-term government support for the PV market, Sharp representatives said the company expects PV energy to account for 25 percent of all global power generation by 2040. Cekuta